



## Wind-up radio designers tackle rural transport challenge

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Product designer . . . XYZ Design has ambitions to solve South Africa's rural transport conundrum, and is seeking manufacturing and distribution partners to help drive the idea off the drawing board and onto the country's roads.

MD Roelf Mulder and his team have developed a modular bicycle that can be assembled in a variety of ways, depending on the user's needs.

For example, the bike can be a conventional two-wheeler, or it can morph into a tricycle, a tandem, or even two side-by-side bicycles with a materials-carrying platform bolted between them. The permutations are varied and numerous.

"We feel we have taken the project as far as we can, and now we need someone to join us in an initiative to produce the bicycle components and take them to market," says Mulder.

"The idea lends itself to a franchise operation geared towards rural entre-preneurial development.

"A franchisee could open a shop stocked with the bicycle's components and assemble them to order. "This person, if he had basic welding skills, could repair the bicycles as well," he adds.

The Department of Transport, which first planted the seed for nonmotorised modes of transport among the design community in 2005, is keen for successful prototypes to be commercialised, and has expressed a willingness to facilitate the process where needed.

. . . XYZ Design's bicycle can be built for both male and female cyclists.

As gears were left out of the design – in support of the uncomplicated maintenance requirements – the postman-style bicycle is suited only to flat terrain.

Rugged, rural conditions – where access to suppliers is limited and skills are basic – were uppermost in the designers' minds.

The bicycles can be assembled without the need for specialised equipment and, if need be, can be repaired with scrap metal, wood, fence wire, or whatever materials are on hand.

"The bicycles must continue to be useable if factory-made components are unavailable," says Mulder.

"We see these bicycles being used to carry water containers, building materials, or patients to clinics and goods to market.

"People's livelihoods will depend on them so they cannot remain idle because a component is unavailable. "They must continue to be robust machines, even with makeshift repairs," he explains.

Many of the materials suggested by the bicycle's designers are recycled.

For example, the rear mudguard is an old bicycle tyre turned inside out.

"We have put a lot of thought into designing this bicycle, but it lends itself to further ingenuity by users as they adapt it to their conditions and needs. "This is why it is modular, made from metal, and held together with roofing bolts or pieces of wire," says Mulder.

. . . XYZ Design was sparked by the Interdesign 2005 conference, when 60 designers from around the world came together in the North West.

The initiative, hosted by the South African Bureau of Standards' (SABS's) Design Institute, was to examine nonmotorised rural transport solutions.

The two-week workshop stemmed from a request by the North West provincial government to the SABS for specifications to be developed for donkey carts.

Mulder led the bicycle and tricycle workshop at this event.

Following this conference, . . . XYZ Design was commissioned by the SABS to develop the modular bicycle idea.

The design criteria were that the bicycle had to be easily built, maintained and repaired in an isolated rural environment; that the components must be uncomplicated; and that it must not make use of gears.

In mid-2008, the modular bicycle, along with other prototypes which evolved from Interdesign 2005, were tested at field trials in the North West.

According to Mulder, . . . XYZ Design's bicycle attracted positive attention from local communities.

"It is now time to get the bicycle onto the market. The need is there."

. . . XYZ Design was responsible for designing the wind-up radio for the Freeplay Foundation

This product is on permanent display in the London Design Museum and the Museum of Modern Art, New York.

. . . XYZ Design has won 14 SABS design excellence awards over the last ten years.

